

Notice of Allowability

Application No.

10/714,016

Applicant(s)

KIM ET AL.

Examiner

Art Unit

Tuan N. Nguyen

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 06/19/2006.
2. ☒ The allowed claim(s) is/are 1-9.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>3/22/2007</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAIL ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below, to the amended claim 9 should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview on March 22, 2007 with Mr. Eric S. Hyman (Attorney for Applicant, Reg. No. 30,139).

Claim 9:

(Currently Amended) A method for operating a bi-directional transceiver module, in order to transmit a transmitting optical signal and a receiving optical signal simultaneously through a piece of optical fiber, said module including:

a 1.3 μm Distributed Bragg Reflection Laser Diode (DBR LD), which includes an active layer which performs light-emission in response to a light at 1.3 μm and a DBR mirror formed near the active layer;

a monitoring Photo-Diode (PD), which has a predetermined energy band gap to absorb a light with a wavelength of 1.3 μm and transmits a light with a wavelength of 1.55 μm ;

an optical signal detection PD, which has a predetermined energy band gap to absorb a signal with a wavelength of 1.55 μm ;

an insulated area, which electrically isolates the 1.3 μm DBR LD, the monitoring PD, and the optical signal detection PD, respectively;

a p-electrode, which is formed in the 1.3 μm DBR LD, the monitoring PD, and the optical signal detection PD, respectively; and

a n-electrode, which is a common electrode;

the method comprising:

applying a forward bias (+) to the p-electrode formed on the 1.3 μm DBR LD;

applying a backward bias (-) to the p-electrode formed on the monitoring PD and the optical signal detection PD; and grounding the n-electrode.

REASON FOR ALLOWANCE

Allowable Subject Matter

2. The following is an examiner's statement of reasons for allowance, with respect to claims 1 and 9, the references of the record fail to teach or suggest a bi-directional transceiver module and method of operating where said module including:

Claims 1, 9:

a 1.3 μm Distributed Bragg Reflection Laser Diode (DBR LD), *which includes an active layer response to a light at 1.3 μm and a DBR mirror formed near the active layer; a monitoring Photo-Diode (PD), to absorb a light with a wavelength of 1.3 μm and transmits a light with a wavelength of 1.55 μm ; an optical signal detection PD, to absorb a signal with a wavelength of 1.55 μm , having an insulated area, isolates the 1.3 μm DBR LD, the monitoring PD, and the optical signal detection PD, respectively; a p-electrode, which is formed in the 1.3 μm DBR LD, the monitoring PD, and the optical signal detection PD, respectively; and an electrode, which is a common electrode;*

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

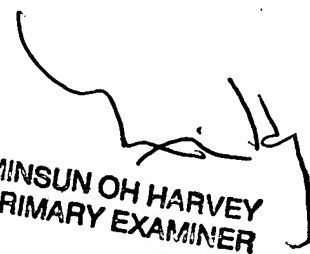
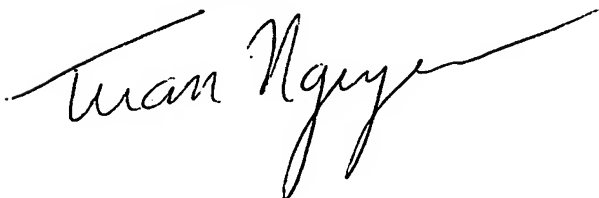
Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harvey Minsun can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan N. Nguyen



**MINSUN OH HARVEY
PRIMARY EXAMINER**